Frequently Asked Questions:
Red Wolf Recovery Program Review

Why did the U.S. Fish and Wildlife Service (Service) conduct a review for the Red Wolf Recovery Program?
The Service recognized a need to gather additional science and research to better guide recovery of the endangered red wolf under the Endangered Species Act (ESA). To that end, the Service initiated a two-year, two-step review of the red wolf recovery program including the non-essential, experimental population in northeastern North Carolina. The review began in 2014 with a peer-reviewed program assessment by the Wildlife Management Institute. It was later expanded in June 2015 to include recovery efforts beyond the program's wild population in North Carolina to help the Service identify actions necessary to guide red wolf recovery on the landscape. A recovery team was established last fall to examine feasibility of recovery, population viability, the historic range, and human dimensions. Its work led to a report with options for the Service to consider.

What issues did the Service consider in the review of the Red Wolf Recovery Program?
The Service worked closely with the North Carolina Wildlife Resources Commission, academia, non-governmental organizations, and private landowners to gather the best available science and review implementation of recovery actions associated with four components:

1) appropriate taxonomic designation and historic distribution of the red wolf;
2) long-term viability of the captive red wolf population;
3) recovery needs of the red wolf population given pressures such as hybridization with coyotes, human caused mortality, and climate change; and
4) how people and red wolves can co-exist.

What were the findings of the Service's review?
The science now available to the Service shows the ***captive population is not secure***. With no changes to current management, the species will likely be lost within the next decade. Under current conditions with only 29 breeding pairs in captivity, the population is unable to sustain itself. To secure the captive population, the Service and its partners must essentially double it to at least 400 wolves. Currently, there are slightly more than 200 red wolves in captivity. The number of breeding pairs must increase to a minimum of 52.

Relative to the ***red wolf's genetics***, there is disagreement in the scientific community regarding the taxonomy and genetic ancestry of the red wolf. The Service is moving forward with the belief that the red wolf remains a listable entity.

The Wildlife Management Institute (WMI) examined the red wolf's ***historic range*** as part of the Service's review. WMI concluded that an accurate predictor of the red wolf's range includes all or parts of a significant part of the Southeast United States including North Carolina. The recovery team generally agrees with WMI's results.

The red wolf is a conservation-reliant species that requires intensive, hands-on management to sustain it in the wild. ***Hybridization*** with coyotes is an ongoing challenge exacerbated by human-caused mortality particularly when a pack loses breeding adults close to mating season. At this time, the reality is that it may simply not be possible to achieve competitive exclusion of coyotes and hybrids with red wolves in northeastern North Carolina. Therefore, the Service will be focusing its management efforts in Dare County and the federal lands there.

What is the decision on future of red wolf recovery?
Based on the best and latest scientific information gathered over the past 15 months, the Service has determined that recovery of the red wolf is feasible with significant changes that must be implemented to secure the captive and wild populations. Since the captive population is not secure, the Service will shift the Red Wolf Recovery Program's focus and resources toward securing the species by fully supporting the captive population. The numbers and type of red wolves managed by SSP partner institutions will need to be increased to a minimum of 400 animals with 52 breeding pairs. Red wolf recovery efforts will be refocused onto federal lands in Dare County, North Carolina. Additionally, the Service will manage the species as a single entity, encompassing both the captive population managed under the Species Survival Plan (SSP) and the non-essential, experimental wild population in northeastern North Carolina. .

How will this decision be implemented?
The Service will implement a series of actions to secure the captive and wild red wolf populations including:

- First, the Service will move quickly to secure the captive population of red wolves, which we now know is not sustainable in its current configuration.
- Second, the Service will determine where potential new sites exist for additional experimental wild populations by October 2017. The Service will ensure these determinations will comply with all environmental rules and include public engagement.
- Third, the Service will propose to revise the existing experimental population rule to apply only to the Dare County Bombing Range and Alligator River National Wildlife Refuge, where stable packs exist on federal lands. This proposed action will change the scope of and goals for the experimental population and is expected to be completed by December 2017. These proposed changes will go through appropriate environmental review and public comment.
- Finally, by October 2017 the Service working with others will complete a comprehensive Species Status Assessment and five-year status review for the red wolf, building on the foundation of work accomplished over the past two years and past history. This will guide the Service's recovery planning in the future.

What does the decision mean for the captive red wolf population?
As part of the Service's review of the Red Wolf Recovery Program, a population viability analysis was conducted to project the long-term demographic and genetic future of the captive red wolf population, which has been managed in zoos and partner facilities across the United States since 1969. This analysis shows that the captive population will likely be lost in the near future without careful management. While the captive population has been maintained at a relatively large population size of more than 150 animals for over 20 years, it needs to increase breeding and its population size to ensure the long-term viability and its ability to serve as a strong source for animals to release to the wild.

A robust captive population is needed to secure the species' survival and support the establishment of new reintroduction projects in the future. It is clear that more animals are needed in captivity to support any wild populatio including the current non-essential, experimental population in North Carolina. The captive population has the potential to be demographically strong, but additional space and improved breeding rates are needed to improve its outcomes in support of the entire red wolf recovery program. To secure the captive population, the numbers and type of red wolves managed by SSP partner institutions will need to be increased to a minimum of 400 animals with 52 breeding pairs. Currently, there are slightly more than 200 red wolves with 29 breeding pairs in captivity. To manage declining gene diversity that is likely under the status quo, the Service will now manage all red wolves—those in captivity and those in the wild—a single metapopulation with occasional movement of animals between SSP partner institutions and the non-essential, experimental population in northeastern North Carolina.

Why has the Service decided not to terminate the non-essential, experimental population in northeastern North Carolina?

The ultimate goal is to recover the red wolf in the wild. As such, the wild population in North Carolina is important to fostering the overall recovery of the species. Wild-born red wolves are biologically beneficial. While captive-born animals can be used at reintroduction sites, the Service's experience in North Carolina has revealed that restoration is much more difficult, time-consuming, and expensive using captive animals. Wild-born wolves have a greater chance of surviving in the wild. These animals are not habituated to human presence and care. They have the best chance of surviving the initial release, successfully establishing territories and reproducing.

Maintaining a smaller, more manageable wild population that is fully integrated with the captive population would:

- Allow for animals removed from the wild to support the necessary expansion and improved genetic health of the captive population;
- Retain some of the influences of natural selection on the gene pool;
- Service as a small stock source for new reintroduction efforts across the red wolf's historic range; and
- Provide a population of continued research on the species' wild behavior.

What are the Service's future plans for managing the non-essential, experimental red wolf population in northeastern North Carolina?

The Service will continue to manage the red wolf non-essential, experimental population in accordance with the 1995 rule (50 C.F.R. § 17.84(c)). However, the Service will propose to refocus of the project to federal lands within Dare County. Focusing efforts to federal lands is necessary to re-establish management control over the wild population by removing isolated wolf packs from lands that the Service lacks access, incorporating these animals into the captive population, and managing the remaining animals in accessible areas to minimize and manage risks of hybridization. This would result in a smaller non-essential, experimental project in terms of population size, the number of packs/breeding pairs, and the area occupied.

The transition from a five-county recovery area to just one county would start with the continued effort to remove wolves from private lands where they are not welcome. Red wolves removed from private lands outside of Dare County would be relocated to SSP partner institutions.

Moving forward, the captive and wild populations no longer be managed separately. The Service will manage all red wolves as one single metapopulation. Animals will be moved between the captive and wild populations to grow the captive population and maintain genetic diversity for both populations.

Are you removing red wolves from the landscape?
Not completely. The Service proposes to refocus red wolf recovery efforts in North Carolina to those on federal lands in Dare County to re-establish management control over the wild population by removing isolated wolf packs from lands that the Service lacks access, incorporating these animals into the captive population, and managing the remaining animals in accessible areas to minimize and manage risks of hybridization. This would result in a smaller non-essential, experimental population, the number of packs/breeding pairs, and the area occupied within the current rules. As such, the Service would remove red wolves from private lands outside of Dare County. Wolves removed from private lands in North Carolina would be released on federal lands in Dare County or relocated to a SSP partner institution.

What are some of the actions the Service will take to manage the presence of red wolves on private lands under the proposed refocused management effort?
Red wolves are federally-listed under the ESA and, in the case of the non-essential experimental population, are protected on public and private lands under the Service's 1995 rule. Even with the refocused and more efficient management effort, the Service recognizes that red wolves will not stay on federal lands in Dare County. The Service proposes to limit non-essential, experimental population protections to Dare County. The Service will continue its efforts to remove red wolves from private lands when requested to do so by the landowner. Private landowners also will be allowed to take animals when authorized by a permit in accordance with the regulation. Red wolves removed from the landscape will be handled and cared for humanely. Some wolves removed from private lands would be released on to Alligator River National Wildlife Refuge and others will be relocated to a SSP institution to grow the captive population and maintain genetic diversity for the species. If a wolf has a health or behavioral problem, it will not be returned to the wild but would be placed in captivity or disposed of in accordance with our management protocols. The Service will continue to seek written agreements with willing landowners adjacent to federal lands to facilitate management of the remaining wild wolves.

Why is the non-essential, experimental population in North Carolina important to red wolf recovery?
The September 1987 release of red wolves into the Alligator River National Wildlife Refuge marked the first time in this Nation's history that a federally-listed species was reintroduced to the historic range from which it had been extirpated. Prior to this reintroduction, the remaining red wolf populations existed solely in captivity. Later, other wolf reintroductions, which were modeled on our program, such as that of the gray wolf into the Greater Yellowstone Ecosystem, have occurred as a means to recover wolf species in the wild. The Service has learned a great deal about the red wolf from the non-essential, experimental population, including, but not limited to, the species' dispersal patterns and need for large home ranges. We also have acquired knowledge about the extent to which coyotes threaten red wolves through gene introgression and the importance of maintaining intact red wolf breeding pairs to counter hybridization and coyote expansion. The Service has gained an increased appreciation of the value and necessity of working in partnership with the State of North Carolina and in engaging private landowners in our reintroduction effort.

The wild population in North Carolina is biologically important to the overall recovery of the red wolf and is integral to proposed path forward. Wild-born red wolves have the best chance of surviving and successfully establishing territories and reproducing. As such, the Service is proposing to manage a

smaller wild population in North Carolina. Maintaining a smaller, more manageable wild population that is fully integrated with the captive population would:

- Allow for animals removed from the wild to support the necessary expansion and improved genetic health of the captive population;
- Retain some of the influences of natural selection on the gene pool;
- Service as a small stock source for new reintroduction efforts across the red wolf's historic range; and
- Provide a population of continued research on the species' wild behavior.

Has the Service identified possible sites for future non-essential, experimental projects?
No. The Service must first secure the captive population before establishing any new populations in the wild.

Is the red wolf a distinct species?
There is disagreement within the scientific community regarding the taxonomy and genetic ancestry of the red wolf. As part of the review, the Service worked with the U.S. Geological Survey and the North Carolina State University to delve further into this issue. Disagreement remains, and we expect the scientific debate in this area to continue. The Service is moving forward with the belief that the red wolf remains a listable entity under the ESA. Currently, the Service recognizes the red wolf as a distinct species and has listed it as such.

What is the current size of the wild red wolf population for the non-essential, experimental project in North Carolina?
The current population estimate is 45 individuals that include 28 with radio collars and one with a satellite collar. Overall, this population consists of five packs and three known breeding pairs, widely distributed across Beaufort, Dare, Hyde, Tyrrell and Washington counties.

What canid species occur in the red wolf recovery area in northeastern North Carolina?
The canids that occur in the recovery area in North Carolina include red wolves, coyotes, and hybrids from interbreeding between red wolves and coyotes. The Service began managing red wolf hybridization with coyotes in 2000. Since then, the amount of coyote DNA in the non-essential, experimental red wolf population has decreased to less than four percent (Gese et al. 2015).

Were Section 7 consultations completed for all the releases of any wolves from captivity into the wild?
No. Consultation was only completed in 1986 for up to six mated pairs of red wolves to be released from captivity. The determination at that time was that the species' reproductive vigor in captivity was secured and its survival was biologically assured. However, all additional releases of captive animals were coordinated with the SSP partner institutions to ensure no negative impacts to the captive population. Releases on private lands occurred with at least verbal permission of the landowner.

Will the Service complete Section 7 consultations for the refocused management approach of the non-essential, experimental project in North Carolina?
Yes. The Service will complete Section 7 consultations on the recovery actions implemented as part of the proposed refocused effort.

What is a recovery team?
Section 4(f) of the ESA allows for the Service to establish a recovery team of appropriate public and private agencies, organizations and individuals to assist in the development and implementation of recovery plans for federally protected species. These teams serve at the request of the Service's Regional Director.

Why did the Service convene a new red wolf recovery team?
The Service took steps to involve state partners and key stakeholders in the review of the Red Wolf Recovery Program. A multi-faceted recovery team was reconvened in October 2015 to address current and future needs to restore red wolves in the wild. The team—comprised of representatives from federal and state agencies, university scientists, species experts, representatives from non-governmental organizations, county officials, and private landowners—reviewed the implementation of recovery actions and the science of red wolf conservation related to species taxonomy and historic range, population viability, and human dimensions.

How did the Service select the red wolf recovery team members?
The red wolf recovery team members were selected based on professional scientific expertise or experience in one or more of the four components of the review, as well as their capacity to help with the next steps in recovery planning and implementation. The diverse composition of the recovery team reflected the Service's commitment to ensure its actions are first, and foremost, grounded in sound science while also addressing any identified shortcomings of our past recovery efforts, especially in terms of engaging landowners in recovery planning and program implementation.

Is it typical to have non-biologists on a recovery team?
Yes. Recovery teams are often used to bring together the diversity of expertise necessary to develop an effective recovery program for a federally protected species and help with its implementation. This concept proved very valuable for the manatee recovery efforts. Recover teams provide numerous advantages including: focusing best available science, increasing depth of expertise, and providing a mechanism for multiple agencies and engaged stakeholders to interact and participate in the planning and implementation of actions necessary to recover and sustain the listed species.

What were the findings of the recovery team?
The recovery team met in-person on two occasions beginning in December 2015 and conducted most of the evaluation through a series of five teleconferences facilitated by a neutral third party. The team defined potential options for the future direction of red wolf conservation, ranging from options that would discontinue all red wolf conservation actions in the wild to options that would move toward what the recovery team considered full recovery of the species in the wild. The Recovery Team identified points of consensus as they emerged, such as the need for sustaining and expanding the captive population to ensure long-term preservation of the red wolf genome. Additionally, there were many points of disagreement and dissenting views, such as whether or not recovery of the red wolf in the wild is feasible. These areas of agreement and disagreement are noted throughout the recovery team's report, available here.

Has the Service responded to a request from the North Carolina Wildlife Resources Commission to declare the red wolf extinct in the wild and end the reintroduction program in North Carolina?
During a January 29, 2015, meeting, the North Carolina Wildlife Resource Commission (NCWRC) adopted a resolution requesting the Service declare the red wolf extinct in the wild and to terminate the reintroduction program in North Carolina. The Service has not formally responded to the

resolution. However, the Service has informally discussed the resolution and NCWRC's position on the red wolf recovery program in North Carolina through its strong relationship with the Commissioners and NCWRC Executive Director Gordon Myers. Since the resolution was adopted, Service regional leaders have met multiple times with the Commissioners to discuss the red wolf recovery program and other management issues in eastern North Carolina. Additionally, Southeast Regional Director Cindy Dohner has attended NCWRC meetings to provide updates on the review wolf review and is in regular contact with Executive Director Myers on this matter.

The Service has addressed concerns included in the resolution as part its review of the Red Wolf Recovery Program. The best available information shows that termination of the non-essential, experimental population in northeastern North Carolina and status quo recovery efforts are two management options not appropriate at this time considering the Service's obligations under the ESA.

Documents supporting the Service's review of the Red Wolf Recovery Program and other information related to the red wolf, is available at www.fws.gov/redwolf/evaluation/.